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Dairy Herd Improvement Letter

OCTOBER - NOVEMBER - DECEMBER 1973

Vol. 49 No. 5

ARS-NE-35

NATIONAL COOPERATIVE
DAIRY HERD IMPROVEMENT
PROGRAM
A dairy recordkeeping plan
for every herd

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35, 31p. OCT/*DEC 1973.

Dairy Herd Improvement Letter
October-November-December 1973

[dairy herd improvement association]

USDA-DHIA PRELIMINARY SIRE SUMMARY LIST AVAILABLE TO DAIRYMEN [cattle]

By Frank N. Dickinson, Rex L. Powell, and Gerald J. King 1/

The first USDA-DHIA Preliminary Sire Summary List was run in June 1973 and the second in September 1973. This information was made available through the cooperation of the member bull studs of the National Association of Animal Breeders (NAAB) and the 11 State and Regional Dairy Records Processing Centers. The member bull studs of NAAB have volunteered funds based on first services from each stud to obtain the lactation records in progress (RIP) from the processing centers.

The Preliminary Sire Summary List will be run three times each year (immediately after the USDA-DHIA Sire Summary List) to provide progeny test information for screening dairy bulls 6 to 12 months earlier than is now possible. Semen can be banked from those bulls that the preliminary summary indicates to be genetically superior. At the same time, inferior bulls can be eliminated from progeny test programs much sooner.

The early availability of information is made possible by using all RIP records for 40 days or longer, in addition to both complete and terminated records for 15 days or longer. This procedure contrasts with the use of data in the Sire Summary List, (for which RIP records and records begun in the previous 12 months are not used in order to avoid a high proportion of cull-cow records).

The RIP records are weighted for their length, projected to a 305-day basis, adjusted to twice-a-day milking, and adjusted for age at calving. They are then sorted with any 305-day recorda already in USDA master files on daughters of the same bulls. All this information is used to calculate preliminary summaries for eligible bulls. All bulls that have

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1/ Dickinson is laboratory chief; Powell is a research geneticist (animal); and King is a dairy husbandman. All are in the Animal Improvement Programs Laboratory (AIPL), Animal Physiology and Genetics Institute, Northeastern Region, ARS. With the technical assistance of Maureen K. Dixon.

not previously had a summary will be summarized if they have at least 10 daughters with herdmates, resulting in a minimum Repeatability of 18 percent. These requirements are exactly the same as for the Sire Summary List.

The percent of incomplete first lactations (records in progress or records terminated prior to 305 days) may range from 0 to 100. Although records are adjusted toward the herdmate average (depending on the length of lactation), the Repeatability calculations do not consider that length. Therefore, the percent that is incomplete provides additional information on the accuracy of the preliminary summary.

As with the Sire Summary List, any publication of preliminary summary data must contain at least the Repeatability, the Predicted Difference for milk and fat, and the date of the summary. The latest summary on a bull should be used, and the preliminary summary must be designated as "Preliminary."

How records for the Preliminary Sire Summary List are handled.--A cutoff date is specified before each run. Each Processing Center sends the latest lactation totals for milk and fat to Beltsville, Md., on magnetic tape. These totals represent the RIP records for each Official DHI and DHIR cow processed. These records are then processed through the USDA editing system.

Records with identification errors that can be corrected are returned to the Processing Centers (and hopefully from there to the farm where the records originated). If the records pass editing, they are used in the preliminary summaries.

Distribution and publication of the Preliminary Sire Summary List.--Computer listings are sent to artificial insemination organizations, and magnetic tapes are forwarded to the breed associations and to each Processing Center.

Most Centers have agreed to print a copy of the Preliminary Sire Summary List for extension dairymen in the State or States that each Center serves. Then, in most States any dairyman could call his State extension office and inquire about the summary of a bull in which he is interested.

In addition, USDA Forms 1202 will be available for most bulls in the Preliminary Sire Summary List. These are listings of the daughters that were used in the preliminary summary, along with their herdmate average and the daughter-herdmate deviation. Of course, the daughter's record includes her herd code, so that she can be located.

Value to the dairyman.--The new Preliminary Sire Summary List should result in a major increase in profitability to dairymen through the availability of a larger number of genetically superior bulls. A major retardant to more rapid genetic progress is the length of time that it takes to obtain a reliable progeny test on each bull. Hopefully, these preliminary summaries will partly solve this problem so that progeny tests can be made for a much larger number of bulls, and much earlier in each bull's life. Those dairymen who are contributing the records that make these preliminary summaries possible are the ones who stand to benefit the most.

USDA-DHIA HERD AVERAGE SUMMARIES, 1972-73 [2]

1973 Official DHI and DHIR Averages - 13,287 Lb Milk, 499 Lb Fat

1973 Owner-Sampler Averages - 12,488 Lb Milk, 468 Lb Fat

This letter contains herd averages on a State and national basis for milk and fat production, feed, feed cost, and milk value for the 1973 DHIA test year (May 1, 1972-April 30, 1973) for the Official DHI, DHIR, and Owner-Sampler plans. The 11 Dairy Records Processing Centers compile and send out these records to the Animal Improvement Programs Laboratory (AIPL), Animal Physiology and Genetics Institute (AP&GI), ARS, USDA, for all herds that have completed a 12-month testing period by the end of the State test year (ending within the national test year).

Four sets of data are presented. The first includes the production data on a cow-year basis for all herds. The second includes production data and averages on a cow-year basis for feed amounts, feed costs, and milk prices for those herds whose owners have reported this information. The third includes cow-year averages within breed by milk production level. The fourth includes cow-year averages within breed by herd size.

Tables are presented to show the cow-year production averages for Official DHI and DHIR testing and for Owner-Sampler testing. These production averages are applied to the respective enrollment in each plan and are quoted as the production averages for all cows in the United States in each plan. We have long referred to those herd records that contain feed, feed cost, and milk price information as "complete herds" and will continue to do so in this letter. Records for complete herds are given in separate tables.

The records are edited in the laboratory to avoid duplication, to restrict data to the correct test year, and to keep items of herd data within established limits. The tables for production summaries and for complete herds include only those records that have passed USDA editing. During the 1973 test year, 92 percent of the herds and cow enrolled in Official DHI and DHIR were included in valid records for production. Sixty-seven percent of the herds and 56 percent of the cows were included in valid complete records.

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[2] Prepared by Gerald J. King and Anna H. Kienast, with the technical assistance of Maureen K. Dixon and Leigh M. Walton, all of AIPL.

1973 Official DHI and DHIR averages.--The summaries show that in the 1973 test year, Official DHI and DHIR cows produced an average of 13,287 pounds of milk and 499 pounds of fat. This is an increase of only 61 pounds of milk over the production for 1972, or about one-fourth of the increase for the 3 years preceding 1973. This is because Connecticut, Maine, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, Vermont, Iowa, Minnesota, and Wisconsin, as well as several other States with small cow populations, had a lower production average than in 1972. The drop in the Northeastern States can be explained largely by the reduction of feed caused by Hurricane Agnes. The number of cows per herd averaged 70.6 in 1973, up from 67.9 in 1972.

For 1973, records were reported for 2,177,626 cows in 30,826 herds on Official DHI test--an increase of 127,494 cows and 636 herds compared with 1972.

Table 1 lists State and national totals for herds and cow-years and averages for cows per herd, percent of the days in milk, and milk and fat production for Official DHI in 1973. Fat percent was 3.76, and average percent days in milk stayed constant at 85.

Table 2 includes State and national totals for herds and cows, as well as averages for percent days in milk, production, feed, value of product, cost of concentrates, and feed cost for Official DHI and DHIR herds whose owners have submitted this information. Concentrates fed remained the same; succulent forage fed increased 200 pounds; dry forage fed remained the same; and reported pasture days decreased 9 days. Value of production increased $30, and feed cost increased $20, so that income over feed cost, at $500, increased $10 over the 1972 value.

Table 3 is the tabulation of the Official DHI and DHIR complete herd records by breed for six breeds plus mixed and other breeds, stratified by level of milk production. These tables have been compiled on a cow-year basis for the first time. All breeds, except Holstein, decreased in numbers.

Table 4 is the tabulation of the Official DHI and DHIR complete herd records by breed stratified by herd size. It should be remembered that many larger herds have only production reported, so they do not appear in the summary of "complete" herds.

1973 Owner-Sampler averages.--In the 1973 test year, 631,269 cows in 16,183 herds on Owner-Sampler test reported records averaging 12,488 pounds of milk and 468 pounds of fat.

Summaries of Owner-Sampler herd records for the 1973 test year are shown in tables 5, 6, 7, and 8. Trends in production and feeding were much the same for Owner-Sampler as for Official DHI and DHIR herds.

In tables 3, 4, 7, and 8, the averages for days in milk and for each feedstuff have been calculated using only the cow-years for herds reporting that information. So the averages printed are, in many cases, representative of fewer cows than the number listed. In all tables, butterfat percent is that applying to the average milk and fat on any given line.

Superiority of tested cows.--Figure 1 and table 9 show the production levels of cows on Official DHI and DHIR test and on Owner-Sampler test compared with all other cows. Official DHI and DHIR cows now have a superiority of approximately 4,100 pounds of milk each over cows not enrolled in either of the two testing programs, while Owner-Sampler cows showed a superiority of 3,400 pounds over cows not enrolled in either program.

Historical summaries of testing programs.--Tables 9 through 12 contain summary data for various periods for Official DHI and DHIR, Owner-Sampler, and all U.S. cows.

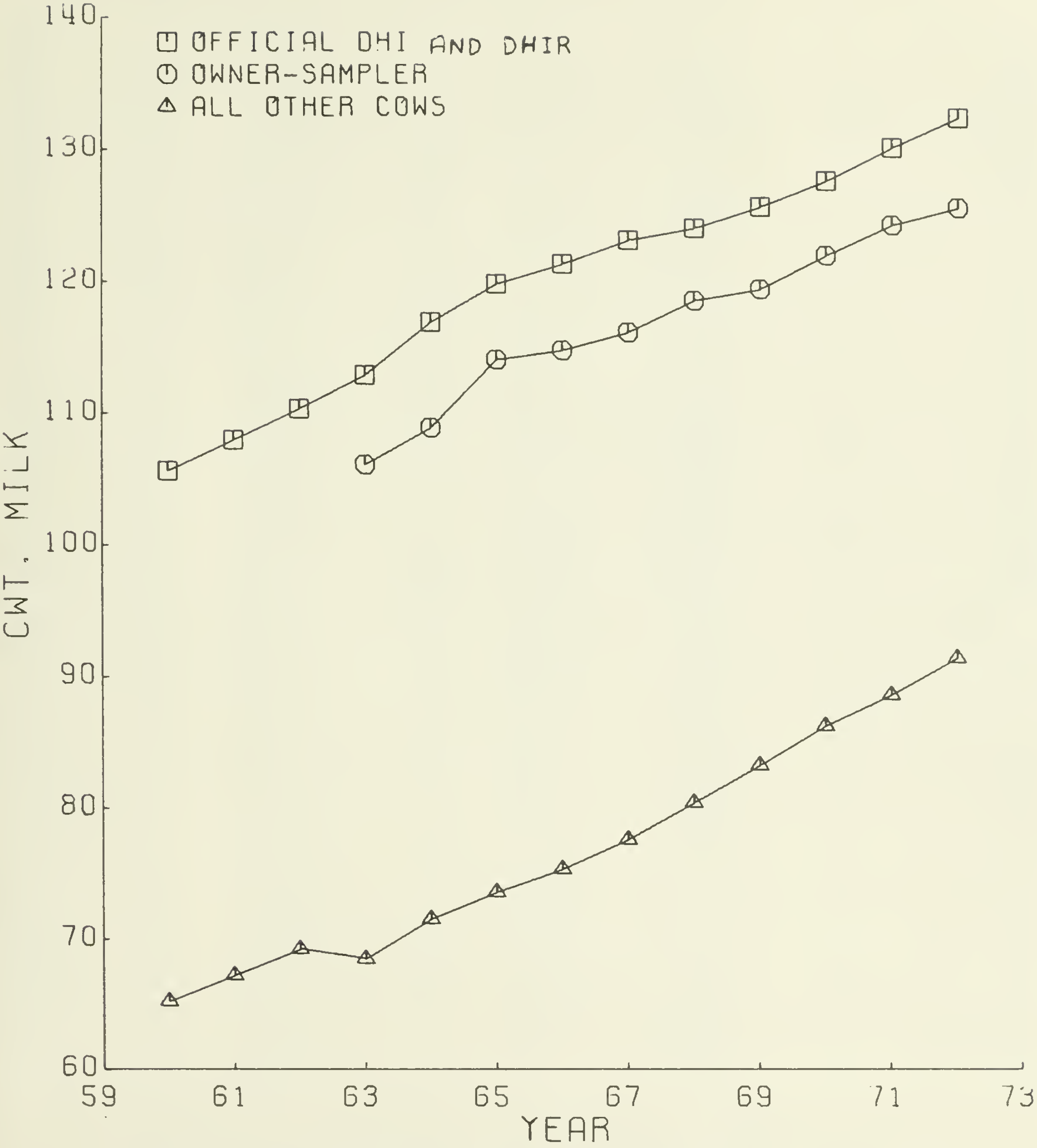

Figure 1.-- Comparison of milk production for cows on Official DHI and DHIR test, Owner-Sampler test, and all other cows.

TABLE 1.--STATE COW-YEAR AVERAGES FOR ALL OFFICIAL HERDS, MAY 1, 1972-APRIL 30, 1973 1/

					COW-YEAR AVERAGE PRODUCTION		
STATE	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT
	NO.	NO.	NO.	%	LB	%	LB
ALABAMA----------	245	29,416.6	120.1	84	11,605	3.94	457
ALASKA-----------	2	124.5	62.3	81	12,363	3.66	453
ARIZONA----------	63	19,634.9	311.7	84	14,522	3.58	520
ARKANSAS---------	103	6,289.6	61.1	83	12,201	3.63	443
CALIFORNIA-------	1,513	398,396.5	263.3	84	14,890	3.73	555
COLORADO---------	227	19,294.3	85.0	86	13,321	3.67	489
CONNECTICUT------	306	21,569.5	70.5	85	13,663	3.62	495
DELAWARE---------	38	2,445.5	64.4	86	13,025	3.75	489
FLORIDA----------	74	13,421.6	181.4	83	10,974	3.71	407
GEORGIA----------	290	31,268.4	107.8	85	12,388	3.70	458
HAWAII-----------	14	4,839.7	345.7	82	11,921	3.19	380
IDAHO------------	391	23,348.2	59.7	86	13,120	3.70	485
ILLINOIS---------	1,070	51,237.0	47.9	86	12,822	3.84	492
INDIANA----------	776	38,962.0	50.2	86	12,780	3.84	491
IOWA-------------	1,414	59,870.2	42.3	84	12,106	3.80	460
KANSAS-----------	749	42,704.6	57.0	84	13,074	3.70	484
KENTUCKY---------	387	22,506.3	58.2	84	11,988	3.73	447
LOUISIANA--------	127	12,703.4	100.0	83	10,583	3.75	397
MAINE------------	354	18,788.6	53.1	85	13,151	3.83	504
MARYLAND---------	577	43,017.6	74.6	86	12,826	3.84	493
MASSACHUSETTS----	306	18,080.2	59.1	86	12,864	3.80	489
MICHIGAN---------	1,194	76,867.0	64.4	87	13,494	3.77	509
MINNESOTA--------	3,121	126,579.5	40.6	86	12,966	3.74	485
MISSISSIPPI------	222	19,539.7	88.0	84	10,917	3.80	415
MISSOURI---------	563	34,311.6	60.9	84	12,404	3.74	464
MONTANA----------	53	4,029.6	76.0	86	13,571	3.73	506
NEBRASKA---------	405	23,825.4	58.8	84	11,861	3.77	447
NEVADA-----------	18	1,824.6	101.4	86	13,211	4.08	539
NEW HAMPSHIRE----	175	10,696.2	61.1	85	12,880	3.80	490
NEW JERSEY-------	259	17,670.4	68.2	85	13,017	3.79	493
NEW MEXICO-------	29	11,514.1	397.0	83	13,153	3.60	473
NEW YORK---------	2,923	173,100.3	59.2	85	13,591	3.67	499
NORTH CAROLINA---	663	54,681.2	82.5	86	13,483	3.72	501
NORTH DAKOTA-----	114	5,384.3	47.2	82	11,987	3.64	436
OHIO-------------	1,541	78,488.1	50.9	86	12,944	3.85	498
OKLAHOMA---------	283	21,504.2	76.0	83	12,840	3.59	461
OREGON-----------	322	28,288.7	87.9	86	12,979	4.00	519
PENNSYLVANIA-----	2,942	145,835.3	49.6	85	13,054	3.85	503
PUERTO RICO------	46	9,083.2	197.5	79	8,102	3.11	252
RHODE ISLAND-----	26	1,149.7	44.2	84	12,082	3.78	457
SOUTH CAROLINA---	232	26,521.4	114.3	85	11,845	3.91	463
SOUTH DAKOTA-----	152	7,624.7	50.2	83	12,480	3.68	459
TENNESSEE--------	461	35,522.3	77.1	85	12,155	3.81	463
TEXAS------------	282	30,264.2	107.3	84	12,761	3.68	470
UTAH-------------	343	26,941.8	78.5	86	13,050	3.66	477
VERMONT----------	672	39,036.6	58.1	85	12,671	3.80	482
VIRGINIA---------	792	62,308.0	78.7	86	12,916	3.69	477
WASHINGTON-------	591	53,478.4	90.5	86	14,207	3.78	537
WEST VIRGINIA----	176	10,646.4	60.5	85	12,581	3.71	467
WISCONSIN--------	3,177	160,885.4	50.6	86	13,316	3.84	512
WYOMING----------	23	2,104.1	91.5	84	11,727	3.68	431
UNITED STATES----	30,826	2,177,625.6	70.6	85	13,287	3.76	499

1/ INCLUDES ALL PRODUCTION DATA REPORTED.

TABLE 2.--STATE COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OFFICIAL HERDS, MAY 1, 1972-APRIL 30, 1973 1/

STATE	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/CWT. MILK	VALUE OF PROD.	INCOME OVER FEED COST
	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
ALABAMA----------	222	25,352.3	114.2	84	11,539	3.95	456	59	105	10	266	241	353	3.12	836	484
ALASKA-----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
ARIZONA----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
ARKANSAS---------	102	6,253.0	61.3	83	12,203	3.63	443	52	24	39	217	187	342	2.82	752	410
CALIFORNIA-------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
COLORADO---------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
CONNECTICUT------	300	20,674.8	68.9	85	13,641	3.63	495	66	155	16	47	255	389	2.89	974	585
DELAWARE---------	37	2,353.1	63.6	86	12,961	3.76	487	49	165	13	103	197	328	2.54	909	580
FLORIDA----------	55	10,405.7	189.2	83	10,597	3.80	403	73	84	11	257	268	349	3.36	847	498
GEORGIA----------	274	29,731.5	108.5	85	12,347	3.70	457	64	145	7	243	263	384	3.13	861	478
HAWAII-----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
IDAHO------------	247	13,847.3	56.1	86	12,968	3.69	479	48	75	76	41	144	304	2.37	684	380
ILLINOIS---------	1,059	50,893.2	48.1	86	12,791	3.84	491	50	114	34	82	145	266	2.11	753	487
INDIANA----------	772	38,796.5	50.3	86	12,779	3.84	491	51	131	31	82	159	300	2.38	797	497
IOWA-------------	1,413	59,801.0	42.3	84	12,104	3.80	460	53	95	36	75	144	254	2.13	658	404
KANSAS-----------	748	42,647.8	57.0	84	13,072	3.70	484	58	93	43	87	181	308	2.38	747	439
KENTUCKY---------	383	22,267.4	58.1	84	11,979	3.73	447	47	124	22	175	173	300	2.55	747	447
LOUISIANA--------	126	12,654.7	100.4	83	10,593	3.75	397	52	47	21	334	208	321	3.10	756	435
MAINE------------	354	18,788.6	53.1	85	13,151	3.83	504	54	131	29	92	234	368	2.82	938	569
MARYLAND---------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
MASSACHUSETTS----	299	17,689.6	59.2	86	12,904	3.79	489	53	133	27	63	256	403	3.16	940	537
MICHIGAN---------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
MINNESOTA--------	3,111	126,171.0	40.6	86	12,955	3.74	484	54	115	43	53	124	221	1.73	700	479
MISSISSIPPI------	222	19,539.7	88.0	84	10,917	3.80	415	44	105	9	294	174	274	2.54	715	442
MISSOURI---------	556	33,759.4	60.7	84	12,423	3.74	465	53	67	34	164	176	324	2.64	718	395
MONTANA----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
NEBRASKA---------	403	23,669.7	58.7	84	11,860	3.77	447	50	104	40	55	147	263	2.25	650	387
NEVADA-----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
NEW HAMPSHIRE----	169	10,292.3	60.9	85	12,948	3.78	490	49	142	27	64	219	391	3.05	915	524
NEW JERSEY-------	258	17,569.6	68.1	85	13,004	3.79	493	51	119	18	78	208	397	3.07	881	485
NEW MEXICO-------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
NEW YORK---------	2,876	169,430.5	58.9	85	13,605	3.67	499	51	108	25	78	209	354	2.62	894	540
NORTH CAROLINA---	624	50,983.8	81.7	86	13,504	3.72	502	60	197	10	108	252	389	2.92	984	596
NORTH DAKOTA-----	114	5,384.3	47.2	82	11,987	3.64	436	48	78	55	80	112	223	1.90	651	428
OHIO-------------	1,468	73,147.1	49.8	86	12,947	3.85	499	45	141	32	83	140	289	2.27	865	576
OKLAHOMA---------	282	21,421.1	76.0	83	12,843	3.59	461	54	45	58	120	183	356	2.82	763	407
OREGON-----------	51	4,263.9	83.6	86	12,818	4.08	523	49	101	50	112	168	333	2.64	802	469
PENNSYLVANIA-----	2,935	145,138.7	49.5	85	13,054	3.85	503	52	136	35	97	186	331	2.57	853	522
PUERTO RICO------	39	7,870.1	201.8	78	7,801	3.13	244	37	0	0	365	201	284	3.67	747	463
RHODE ISLAND-----	25	1,133.5	45.3	83	12,041	3.78	455	48	140	23	115	216	382	3.23	876	494
SOUTH CAROLINA---	228	25,929.2	113.7	85	11,885	3.92	466	52	151	14	257	214	349	2.99	881	532
SOUTH DAKOTA-----	152	7,624.7	50.2	83	12,480	3.68	459	53	101	46	58	138	240	1.93	668	428
TENNESSEE--------	461	35,522.3	77.1	85	12,155	3.81	463	49	163	13	153	197	335	2.79	816	481
TEXAS------------	276	29,311.1	106.2	84	12,817	3.68	472	63	46	49	222	225	371	2.94	869	498
UTAH-------------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
VERMONT----------	670	38,907.3	58.1	85	12,669	3.80	482	49	85	22	87	220	368	2.93	886	518
VIRGINIA---------	789	61,955.8	78.5	86	12,947	3.69	478	48	178	13	144	209	344	2.68	900	556
WASHINGTON-------	353	31,005.1	87.8	86	14,099	3.79	534	55	70	54	141	183	359	2.57	826	467
WEST VIRGINIA----	175	10,595.7	60.5	85	12,581	3.71	467	51	129	21	128	201	329	2.64	822	493
WISCONSIN--------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
WYOMING----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
UNITED STATES--	22,628	1,322,782.4	58.5	85	12,801	3.76	481	52	118	30	113	187	321	2.54	821	500

1/ HERDS DESIGNATED AS "COMPLETE" WHEN ALL FEEDS, COSTS, AND VALUE OF PRODUCT ARE REPORTED.

2/ THESE STATES HAVE PRODUCTION RECORDS INCLUDED IN THE PLAN, BUT NONE OF THE HERD RECORDS ARE "COMPLETE".

TABLE 3.--U.S. COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OFFICIAL HERDS BY BREED AND MILK LEVEL, MAY 1, 1972-APRIL 30, 1973 1/

MILK LEVEL	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/ CWT MILK	VALUE OF PROD.	INCOME OVER FDCOST
RANGE	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
AYRSHIRE																
LESS THAN 6,500---	3	119.5	39.8	80	6,110	3.91	239	35	21	35	87	139	242	4.00	363	122
6,500 - 7,499---	2	128.8	64.4	79	7,302	4.00	292	37	86	22	125	101	211	2.89	477	266
7,500 - 8,499---	18	693.2	38.5	80	8,069	3.95	319	37	78	35	158	122	221	2.75	494	273
8,500 - 9,499---	44	1,895.4	43.1	83	9,083	3.99	362	41	96	34	145	137	244	2.69	578	335
9,500 - 10,499---	76	3,203.8	42.2	83	10,092	4.00	404	42	96	35	144	154	271	2.68	665	394
10,500 - 11,499---	93	4,271.7	45.9	84	10,984	3.99	438	45	117	34	153	168	301	2.74	723	422
11,500 - 12,499---	67	3,344.9	49.9	85	12,008	4.02	483	48	123	35	127	185	316	2.63	815	499
12,500 - 13,499---	41	1,844.4	45.0	86	12,868	3.94	507	53	124	31	136	204	327	2.55	882	555
13,500 - 14,499---	11	445.1	40.5	86	14,031	3.99	560	62	109	44	157	265	412	2.93	1,003	592
14,500 - 15,499---	4	149.1	37.3	85	14,720	3.72	548	56	88	45	157	221	334	2.27	910	575
AVG.--COMP. REC.--	359	16,095.9	44.8	84	10,939	3.99	436	46	109	35	143	170	293	2.69	727	433
AVG.----ALL REC.--	406	18,895.0	46.5	84	11,004	3.99	439									
GUERNSEY																
LESS THAN 6,500---	11	687.0	62.5	77	5,879	4.76	280	29	144	48	130	111	215	3.64	455	240
6,500 - 7,499---	54	3,352.2	62.1	82	7,037	4.58	322	39	70	22	243	136	223	3.17	518	296
7,500 - 8,499---	144	6,432.6	44.7	84	8,087	4.71	381	40	93	32	174	128	236	2.92	571	335
8,500 - 9,499---	259	13,599.0	52.5	85	9,015	4.69	423	41	106	31	171	143	265	2.94	652	387
9,500 - 10,499---	286	14,700.1	51.4	86	10,015	4.73	474	45	106	33	161	158	283	2.82	719	436
10,500 - 11,499---	203	10,272.0	50.6	87	10,927	4.69	512	47	108	30	179	163	287	2.63	794	508
11,500 - 12,499---	95	5,065.8	53.3	87	11,837	4.71	558	48	116	32	158	172	301	2.55	843	542
12,500 - 13,499---	32	1,604.6	50.1	89	12,930	4.80	620	51	102	35	172	185	309	2.39	937	628
13,500 - 14,499---	5	250.0	50.0	88	13,823	4.31	596	59	181	33	55	224	357	2.58	989	631
AVG.--COMP. REC.--	1,089	55,963.3	51.4	85	9,754	4.71	459	43	104	31	173	152	272	2.82	703	431
AVG.----ALL REC.--	1,505	83,620.8	55.6	85	9,930	4.71	468									
HOLSTEIN																
LESS THAN 6,500---	28	2,461.2	87.9	80	5,686	3.46	197	27	120	29	325	117	213	3.77	455	242
6,500 - 7,499---	41	2,930.8	71.5	78	7,012	3.55	249	36	112	33	267	140	241	3.45	509	268
7,500 - 8,499---	141	10,789.6	76.5	79	8,104	3.54	287	42	100	31	250	159	264	3.26	580	316
8,500 - 9,499---	311	20,558.4	66.1	81	9,087	3.65	332	43	105	36	218	156	267	2.94	599	332
9,500 - 10,499---	795	46,585.4	58.6	82	10,080	3.66	369	46	110	34	183	158	277	2.74	628	351
10,500 - 11,499---	1,696	99,999.7	59.0	84	11,056	3.68	407	47	132	32	163	183	292	2.64	692	400
11,500 - 12,499---	2,936	174,424.1	59.4	84	12,031	3.67	442	50	133	34	157	174	306	2.54	757	451
12,500 - 13,499---	3,918	235,629.1	60.1	85	13,008	3.67	478	53	140	35	151	188	324	2.49	820	495
13,500 - 14,499---	4,003	237,352.3	59.3	86	13,980	3.67	513	56	144	35	142	198	338	2.42	884	546
14,500 - 15,499---	2,805	164,559.8	58.7	86	14,973	3.66	548	58	150	35	145	210	354	2.37	954	600
15,500 - 16,499---	1,434	84,703.1	59.1	87	15,934	3.65	581	61	149	37	139	223	372	2.34	1,012	640
16,500 - 17,499---	536	31,101.0	58.0	87	16,905	3.63	614	65	150	39	147	238	392	2.32	1,071	679
17,500 - 18,499---	171	9,305.3	54.4	88	17,868	3.59	641	67	138	44	151	250	411	2.30	1,117	707
18,500 - 19,499---	40	1,934.1	48.4	87	18,954	3.59	680	70	128	41	145	256	414	2.18	1,191	776
19,500 - 20,499---	6	245.2	40.9	89	19,765	3.69	729	70	118	45	134	287	452	2.28	1,265	814
MORE THAN 20,499--	2	97.3	48.7	90	21,276	3.45	735	69	64	48	201	285	463	2.18	1,366	903
AVG.--COMP. REC.--	18,863	1,122,676.0	59.5	85	13,285	3.67	487	54	139	35	154	191	328	2.49	841	513
AVG.----ALL REC.--	25,690	1,841,564.0	71.7	85	13,754	3.67	505									
JERSEY																
LESS THAN 6,500---	41	2,953.5	62.3	79	5,745	5.00	287	30	56	30	245	110	209	3.67	437	228
6,500 - 7,499---	113	6,029.0	53.4	82	7,113	5.00	356	38	84	26	194	135	231	3.24	516	285
7,500 - 8,499---	238	14,754.7	62.0	83	8,074	5.02	405	41	86	23	237	152	250	3.09	612	363
8,500 - 9,499---	312	19,270.0	61.8	85	8,983	5.01	450	43	95	25	203	162	267	2.97	682	415
9,500 - 10,499---	209	13,638.2	65.3	86	9,971	5.05	504	46	106	27	182	173	291	2.92	753	462
10,500 - 11,499---	83	5,219.6	62.9	87	10,931	4.99	546	48	96	26	193	191	310	2.83	839	529
11,500 - 12,499---	27	1,717.3	63.6	86	11,773	5.00	589	48	101	24	190	189	304	2.59	925	621
12,500 - 13,499---	1	111.9	111.9	87	13,315	5.10	679	52	--	19	365	237	325	2.44	1,049	724
13,500 - 14,499---	2	95.9	48.0	86	13,912	5.10	710	58	114	38	123	257	440	3.17	1,058	618
AVG.--COMP. REC.--	1,026	63,390.1	61.8	84	8,927	5.02	448	43	93	25	207	181	267	3.02	676	409
AVG.----ALL REC.--	1,371	96,207.1	70.2	84	9,053	5.05	457									

TABLE 3.--U.S. COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OFFICIAL HERDS BY BREED AND MILK LEVEL, MAY 1, 1972-APRIL 30, 1973 (CONTINUED)

MILK LEVEL	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/ CWT MILK	VALUE OF PROD.	INCOME OVER FDCOST
RANGE	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
BROWN SWISS																
LESS THAN 6,500---	2	88.7	44.4	74	6,082	4.00	243	31	45	63	186	100	270	4.39	360	89
6,500 - 7,499---	1	25.8	25.8	84	7,039	3.92	276	53	0	52	366	202	339	4.82	474	135
7,500 - 8,499---	15	578.1	38.5	82	8,041	4.09	329	47	107	40	111	142	253	3.15	497	244
8,500 - 9,499---	46	1,774.0	38.6	83	9,057	4.12	373	42	112	37	136	120	235	2.59	542	307
9,500 - 10,499---	63	2,520.5	40.0	85	10,024	4.09	410	43	115	36	136	131	247	2.47	611	363
10,500 - 11,499---	99	3,939.8	39.8	85	11,068	4.06	449	49	122	34	167	157	277	2.50	705	428
11,500 - 12,499---	86	3,481.3	40.5	85	12,019	4.09	491	56	119	39	170	180	312	2.59	780	469
12,500 - 13,499---	57	2,285.6	40.1	87	12,923	4.12	532	52	121	40	133	184	332	2.57	877	545
13,500 - 14,499---	25	1,144.3	45.8	87	14,025	4.00	561	60	112	39	154	196	339	2.42	884	544
14,500 - 15,499---	8	436.3	54.5	86	14,719	4.02	591	61	144	30	147	210	338	2.30	1,013	675
15,500 - 16,499---	3	47.2	15.7	86	15,763	4.02	633	73	106	49	122	218	377	2.39	878	501
16,500 - 17,499---	1	37.2	37.2	85	16,918	4.03	682	60	--	65	94	205	328	1.94	1,040	712
AVG.--COMP. REC.--	406	16,358.8	40.3	85	11,341	4.07	462	50	118	37	151	181	289	2.56	725	437
AVG.----ALL REC.--	508	22,481.8	44.3	85	11,573	4.09	473									
MILKING SHORTHORN																
6,500 - 7,499---	7	168.0	24.0	81	7,158	3.74	268	32	64	44	192	90	242	3.37	439	197
7,500 - 8,499---	16	451.1	28.2	79	7,930	3.72	295	34	64	36	184	107	223	2.82	464	241
8,500 - 9,499---	19	571.0	30.1	80	9,066	3.68	334	37	86	39	147	104	218	2.41	492	274
9,500 - 10,499---	12	401.0	33.4	83	10,039	3.65	366	41	97	43	182	110	244	2.41	561	318
10,500 - 11,499---	5	141.0	28.2	84	10,998	3.67	404	43	98	37	163	105	201	1.82	583	382
11,500 - 12,499---	6	202.6	33.8	84	11,955	3.80	454	44	68	43	190	156	299	2.50	712	413
AVG.--COMP. REC.--	65	1,934.7	29.8	81	9,280	3.70	343	38	80	40	173	110	234	2.56	525	291
AVG.----ALL REC.--	84	2,765.2	32.9	82	9,507	3.74	356									
MIXED AND OTHER																
LESS THAN 6,500---	6	404.5	67.4	83	5,507	4.32	238	25	32	17	308	96	184	3.37	390	206
6,500 - 7,499---	16	1,037.9	64.9	78	7,080	4.22	299	41	82	19	251	153	248	3.51	518	270
7,500 - 8,499---	35	2,270.5	64.9	81	7,946	4.34	345	44	112	22	199	162	269	3.39	602	333
8,500 - 9,499---	75	4,230.0	56.4	83	9,044	4.14	374	44	101	23	228	160	259	2.87	629	370
9,500 - 10,499---	133	8,256.4	62.1	84	9,969	4.08	407	45	126	27	179	164	287	2.88	664	377
10,500 - 11,499---	141	8,289.4	58.8	85	11,021	3.98	439	51	114	35	200	181	304	2.76	730	426
11,500 - 12,499---	143	7,846.4	54.9	85	11,984	3.92	470	51	120	34	188	190	317	2.65	802	485
12,500 - 13,499---	135	7,320.8	54.2	85	12,978	3.82	496	52	131	35	168	189	332	2.56	842	511
13,500 - 14,499---	74	3,780.4	51.1	85	13,948	3.81	531	55	141	34	123	191	333	2.39	889	555
14,500 - 15,499---	36	1,816.0	50.4	87	15,026	3.83	575	57	137	35	136	195	334	2.22	935	601
15,500 - 16,499---	20	875.0	43.8	86	15,958	3.77	602	57	135	36	110	212	355	2.22	1,008	653
16,500 - 17,499---	4	142.4	35.6	88	17,119	3.81	652	65	152	27	206	281	448	2.62	1,012	564
17,500 - 18,499---	2	93.5	46.8	89	17,749	3.59	638	63	98	43	180	195	330	1.86	1,132	803
AVG.--COMP. REC.--	820	46,363.2	56.5	85	11,359	3.95	449	49	121	31	184	179	305	2.73	753	448
AVG.----ALL REC.--	1,262	112,090.8	88.8	85	12,580	3.91	492									

1/ DASHES INDICATE THAT FEED WAS NOT INCLUDED IN RATION.

TABLE 4.--U.S. COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OFFICIAL HERDS BY BREED AND HERD SIZE, MAY 1, 1972-APRIL 30, 1973 1/

HERD SIZE	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/ CWT MILK	VALUE OF PROD.	INCOME OVER FDCOST
RANGE	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
AYRSHIRE																
5.0 - 25---	69	1,186.2	17.2	84	11,048	3.96	438	47	89	41	135	167	289	2.63	705	415
25.1 - 50---	171	6,274.6	36.7	83	10,722	3.95	423	45	88	39	150	164	284	2.66	693	409
50.1 - 75---	81	4,898.1	60.5	84	10,989	4.00	440	44	106	31	145	169	296	2.71	746	450
75.1 - 100---	23	1,948.2	84.7	83	11,344	4.04	458	46	153	28	106	175	306	2.69	770	463
100.1 - 150---	14	1,635.9	116.9	85	11,222	4.07	457	49	164	26	134	190	314	2.79	771	456
150.1 - 200---	1	152.9	152.9	89	9,179	4.14	380	41	92	23	193	142	236	2.57	670	434
GUERNSEY																
5.0 - 25---	189	3,439.1	18.2	85	9,592	4.69	450	42	75	39	163	142	255	2.69	661	405
25.1 - 50---	503	18,862.3	37.5	86	9,714	4.71	458	42	88	37	154	137	253	2.64	673	419
50.1 - 75---	246	14,789.4	60.1	86	9,995	4.72	472	42	109	30	155	146	267	2.69	716	449
75.1 - 100---	73	6,229.8	85.3	86	9,910	4.77	473	44	125	23	178	163	282	2.85	735	453
100.1 - 150---	48	5,703.3	118.8	86	9,823	4.64	456	45	108	27	209	171	297	3.05	728	432
150.1 - 200---	20	3,422.3	171.1	84	9,752	4.67	455	46	140	28	245	176	314	3.26	745	430
200.1 - 300---	6	1,457.6	242.9	82	9,082	4.66	423	50	100	33	175	193	305	3.41	712	407
300.1 - 400---	2	732.4	366.2	83	9,952	4.70	468	47	191	41	246	193	371	3.74	823	452
400.1 - 500---	1	458.6	458.6	80	8,941	4.63	414	44	201	13	69	204	351	3.93	759	408
750.1 - 1,000---	1	868.5	868.5	75	7,004	4.38	307	61	16	6	365	213	251	3.58	592	341
HOLSTEIN																
5.0 - 25---	1,332	26,728.3	20.1	85	13,077	3.69	482	55	83	50	144	166	285	2.20	755	469
25.1 - 50---	8,520	322,774.8	37.9	85	13,336	3.68	491	54	112	41	140	175	304	2.30	807	503
50.1 - 75---	5,016	304,683.1	60.7	85	13,402	3.67	492	53	140	34	144	188	327	2.46	844	517
75.1 - 100---	1,984	169,904.7	85.6	85	13,368	3.66	489	53	155	30	158	197	338	2.55	864	526
100.1 - 150---	1,372	163,378.8	119.1	85	13,299	3.65	485	55	162	27	172	206	349	2.65	871	521
150.1 - 200---	391	65,998.2	168.8	85	13,214	3.65	482	57	175	26	192	214	361	2.77	877	515
200.1 - 300---	186	43,949.2	236.3	85	12,597	3.62	456	57	170	31	208	214	356	2.88	856	501
300.1 - 400---	46	15,819.8	343.9	84	12,171	3.62	441	56	175	33	198	215	350	2.93	854	503
400.1 - 500---	9	3,888.2	432.0	83	11,414	3.50	399	60	142	16	306	223	332	2.96	832	500
500.1 - 750---	5	3,032.1	606.4	84	12,758	3.60	459	72	128	34	51	244	367	2.87	843	476
750.1 - 1,000---	1	757.8	757.8	84	14,005	2.99	419	78	182	22	--	317	435	3.11	1,037	602
JERSEY																
5.0 - 25---	156	2,595.7	16.6	85	8,623	5.00	431	41	68	34	168	154	263	3.06	622	359
25.1 - 50---	364	13,662.6	37.5	85	8,930	5.02	448	41	73	31	170	148	248	2.79	649	402
50.1 - 75---	252	15,130.0	60.0	85	8,908	5.02	447	41	87	28	177	154	260	2.95	664	404
75.1 - 100---	103	8,899.6	86.4	84	8,817	4.99	440	40	102	26	217	151	258	2.96	662	404
100.1 - 150---	102	12,021.9	117.9	85	9,095	5.06	460	43	106	20	232	169	280	3.11	706	426
150.1 - 200---	19	3,180.8	167.4	83	8,803	5.08	447	45	112	19	252	179	282	3.25	697	414
200.1 - 300---	24	5,648.9	235.4	84	9,117	5.00	456	53	107	18	279	195	306	3.3[illegible]	728	423
300.1 - 400---	5	1,749.0	349.8	77	8,435	4.91	414	44	84	19	300	178	294	3.54	696	403
500.1 - 750---	1	501.6	501.6	87	9,270	4.90	454	44	181	2	63	180	272	2.93	793	521
BROWN SWISS																
5.0 - 25---	101	1,827.8	18.1	85	11,491	4.08	469	49	88	48	152	147	273	2.39	691	418
25.1 - 50---	216	7,818.9	36.2	85	11, 91	4.08	453	49	103	41	143	151	275	2.49	695	420
50.1 - 75---	63	3,855.7	61.2	85	11,382	4.09	466	50	137	34	134	162	287	2.56	736	449
75.1 - 100---	16	1,385.0	86.6	86	12,257	4.06	498	44	137	28	153	148	293	2.38	792	499
100.1 - 150---	7	841.3	120.2	85	11,119	4.06	451	56	158	19	149	212	359	3.25	755	396
150.1 - 200---	2	383.7	191.9	87	11,802	3.97	469	90	164	5	365	321	416	3.53	966	550
200.1 - 300---	1	246.4	246.4	84	12,443	3.93	489	68	130	41	--	227	392	3.15	925	533
MILKING SHORTHORN																
5.0 - 25---	25	451.1	18.0	80	8,847	3.66	324	35	71	47	159	96	200	2.33	475	275
25.1 - 50---	37	1,303.6	35.2	81	9,401	3.72	350	39	82	38	174	116	240	2.59	540	300
50.1 - 75---	3	180.0	60.0	85	9,494	3.64	346	34	93	35	203	106	276	2.92	540	265
MIXED AND OTHER																
5.0 - 25---	67	1,327.6	19.8	85	11,171	4.03	450	49	73	41	173	169	290	2.64	698	408
25.1 - 50---	379	14,289.5	37.7	85	11,800	3.93	464	48	101	38	156	167	293	2.51	752	459
50.1 - 75---	234	14,101.5	60.3	84	11,516	3.93	453	47	128	31	168	168	296	2.60	749	454
75.1 - 100---	68	5,791.1	85.2	85	11,520	3.98	459	47	142	28	183	175	307	2.70	779	472
100.1 - 150---	47	5,603.5	119.2	85	10,863	4.11	446	54	129	23	240	207	328	3.05	762	434
150.1 - 200---	17	2,819.1	165.8	83	10,311	3.88	400	60	123	20	249	221	329	3.31	744	414
200.1 - 300---	5	1,198.5	239.7	83	9,505	3.92	373	59	134	8	233	223	325	3.44	704	379
300.1 - 400---	2	681.8	340.9	84	11,063	3.66	405	60	152	43	325	233	366	3.30	880	515
500.1 - 750---	1	550.6	550.6	86	9,518	3.74	356	44	219	--	--	174	362	3.80	641	279

1/ DASHES INDICATE THAT FEED WAS NOT INCLUDED IN RATION.

TABLE 5.--STATE COW-YEAR AVERAGES FOR ALL OWNER-SAMPLER HERDS, MAY 1, 1972-APRIL 30, 1973 1/

STATE	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	COW-YEAR AVERAGE PRODUCTION		
					MILK	FAT	FAT
	NO.	NO.	NO.	%	LB	%	LB
ALABAMA----------	9	1,391.8	154.6	85	11,465	3.65	418
ALASKA-----------	5	305.2	61.0	85	12,397	3.45	428
ARIZONA----------	2	209.2	104.6	88	7,861	4.96	390
ARKANSAS---------	51	4,162.7	81.6	83	12,379	3.67	454
CALIFORNIA-------	58	8,224.8	141.8	83	14,152	3.77	534
COLORADO---------	9	556.3	61.8	86	13,190	3.45	455
CONNECTICUT------	28	1,125.5	40.2	84	12,647	3.67	464
FLORIDA----------	9	2,455.4	272.8	84	10,784	3.76	406
HAWAII-----------	2	1,021.1	510.6	80	12,218	3.22	393
IDAHO------------	22	1,278.6	58.1	85	12,822	3.63	466
ILLINOIS---------	278	10,924.1	39.3	85	12,497	3.78	472
INDIANA----------	98	3,887.1	39.7	85	12,961	3.73	483
IOWA-------------	740	25,129.5	34.0	83	11,767	3.75	441
KANSAS-----------	105	4,975.5	47.4	83	12,576	3.67	461
KENTUCKY---------	24	1,583.3	56.0	83	11,569	3.60	417
LOUISIANA--------	3	326.7	108.9	83	11,198	3.28	367
MAINE------------	49	2,329.1	47.5	85	12,203	3.77	460
MARYLAND---------	49	2,404.7	49.1	85	12,544	3.79	476
MASSACHUSETTS----	31	1,116.8	36.0	85	12,177	3.73	454
MICHIGAN---------	739	33,295.0	45.1	86	13,257	3.76	499
MINNESOTA--------	2,036	66,782.2	32.8	84	12,200	3.73	455
MISSISSIPPI------	3	305.8	101.9	86	9,314	4.22	393
MISSOURI---------	129	6,335.6	49.1	84	11,740	3.69	433
MONTANA----------	11	1,191.6	108.3	83	12,581	3.50	440
NEBRASKA---------	51	2,642.8	51.8	84	12,225	3.59	439
NEVADA-----------	2	230.1	115.1	85	11,174	3.82	427
NEW HAMPSHIRE----	30	1,247.8	41.6	84	11,718	3.78	443
NEW JERSEY-------	12	529.6	44.1	86	12,274	3.71	455
NEW MEXICO-------	1	63.0	63.0	83	10,908	3.47	379
NEW YORK---------	1,275	54,949.0	43.1	84	12,601	3.62	456
NORTH CAROLINA---	24	1,323.4	55.1	86	13,781	3.66	505
NORTH DAKOTA-----	10	512.3	51.2	81	11,446	3.55	406
OHIO-------------	420	16,641.0	39.6	86	12,849	3.74	480
OKLAHOMA---------	36	1,645.7	45.7	83	12,928	3.47	448
OREGON-----------	32	1,511.1	47.2	85	11,576	4.12	477
PENNSYLVANIA-----	699	25,706.5	36.8	83	12,194	3.82	466
SOUTH CAROLINA---	7	404.6	57.8	85	12,880	3.63	468
SOUTH DAKOTA-----	285	11,333.6	39.8	81	11,471	3.58	411
TENNESSEE--------	5	236.1	47.2	88	11,609	3.54	411
TEXAS------------	32	2,943.6	92.0	84	11,063	3.62	400
UTAH-------------	16	668.0	41.8	87	13,297	3.68	489
VERMONT----------	155	7,226.9	46.6	85	11,350	3.89	441
VIRGINIA---------	35	1,655.7	47.3	85	12,662	3.60	456
WASHINGTON-------	29	1,674.6	57.7	86	13,038	3.96	516
WEST VIRGINIA----	15	504.7	33.6	83	11,667	3.87	452
WISCONSIN--------	8,518	316,047.1	37.1	85	12,583	3.77	475
WYOMING----------	4	254.4	63.6	84	12,138	3.46	420
UNITED STATES----	16,183	631,269.2	39.0	84	12,488	3.75	468

1/ INCLUDES ALL PRODUCTION DATA REPORTED.

TABLE 6.--STATE COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OWNER-SAMPLER HERDS, MAY 1, 1972-APRIL 30, 1973 1/

STATE	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/ CWT. MILK	VALUE OF PROC.	INCOME OVER FEEDCST
	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
ALABAMA----------	9	1,391.8	154.6	85	11,465	3.65	418	60	130	9	222	240	374	3.27	798	424
ALASKA-----------	1	58.4	58.4	88	12,422	3.42	425	47	124	19	58	222	428	3.45	1,388	960
ARIZONA----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
ARKANSAS---------	50	2,427.8	48.6	83	11,491	3.65	419	50	25	35	239	176	303	2.65	675	372
CALIFORNIA-------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
COLORADO---------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
CONNECTICUT------	27	1,095.9	40.6	84	12,664	3.66	464	62	127	26	102	238	373	2.96	901	529
FLORIDA----------	9	2,455.4	272.8	84	10,784	3.76	406	75	102	5	300	260	339	3.21	852	514
HAWAII-----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
IDAHO------------	17	814.5	47.9	85	11,871	3.68	437	47	48	92	61	135	301	2.57	616	314
ILLINOIS---------	176	7,314.0	41.6	85	12,666	3.77	477	51	119	35	73	138	264	2.10	729	465
INDIANA----------	98	3,887.1	39.7	85	12,961	3.73	483	51	126	32	80	162	294	2.29	789	495
IOWA-------------	740	25,129.5	34.0	83	11,767	3.75	441	49	80	41	81	128	236	2.03	619	384
KANSAS-----------	104	4,928.7	47.4	83	12,564	3.67	461	53	84	44	88	162	283	2.27	688	405
KENTUCKY---------	24	1,583.3	66.0	83	11,569	3.60	417	47	140	15	183	183	312	2.74	693	381
LOUISIANA--------	3	326.7	108.9	83	11,198	3.28	367	50	18	37	316	181	297	2.64	769	472
MAINE------------	49	2,329.1	47.5	85	12,203	3.77	460	47	137	29	101	199	332	2.74	851	519
MARYLAND---------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
MASSACHUSETTS----	31	1,116.8	36.0	85	12,177	3.73	454	53	115	32	116	220	349	2.92	875	527
MICHIGAN---------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
MINNESOTA--------	2,027	66,509.6	32.8	84	12,201	3.73	455	51	99	48	65	118	213	1.76	646	433
MISSISSIPPI------	3	305.8	101.9	86	9,314	4.22	393	43	126	8	274	160	261	2.84	654	393
MISSOURI---------	129	6,335.6	49.1	84	11,740	3.69	433	50	57	34	178	169	310	2.67	663	352
MONTANA----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
NEBRASKA---------	51	2,642.8	51.8	84	12,225	3.59	439	40	64	54	79	136	259	2.15	650	391
NEVADA-----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
NEW HAMPSHIRE----	30	1,247.8	41.6	84	11,718	3.78	443	49	104	39	77	216	365	3.16	822	458
NEW JERSEY-------	12	529.6	44.1	86	12,274	3.71	455	47	31	9	37	203	477	3.89	831	354
NEW MEXICO-------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
NEW YORK---------	1,262	54,267.3	43.0	84	12,594	3.62	456	46	85	30	96	194	329	2.64	815	486
NORTH CAROLINA---	24	1,323.4	55.1	86	13,781	3.66	505	62	185	11	124	261	398	2.92	997	599
NORTH DAKOTA-----	10	512.3	51.2	81	11,446	3.55	406	45	66	45	80	96	184	1.61	588	404
OHIO-------------	398	15,695.2	39.4	86	12,813	3.74	479	43	131	34	89	135	283	2.23	842	559
OKLAHOMA---------	36	1,645.7	45.7	83	12,928	3.47	448	52	15	55	184	173	330	2.57	742	413
OREGON-----------	10	635.1	63.5	85	12,268	3.92	481	45	115	56	87	164	317	2.59	734	417
PENNSYLVANIA-----	697	25,588.2	36.7	84	12,193	3.82	466	49	111	39	118	175	313	2.60	786	473
SOUTH CAROLINA---	6	338.9	56.5	85	12,446	3.66	455	49	75	24	287	203	314	2.54	884	570
SOUTH DAKOTA-----	285	11,333.6	39.8	81	11,471	3.58	411	48	87	48	73	117	213	1.88	593	380
TENNESSEE--------	5	236.1	47.2	88	11,609	3.54	411	42	149	23	161	164	316	2.72	735	419
TEXAS------------	31	2,875.9	92.8	84	11,083	3.60	399	56	65	48	202	194	362	3.35	758	396
UTAH-------------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
VERMONT----------	150	7,002.3	46.7	85	11,357	3.87	440	44	43	26	93	200	341	3.03	796	455
VIRGINIA---------	35	1,655.7	47.3	85	12,662	3.60	456	51	162	16	174	220	354	2.82	848	494
WASHINGTON-------	17	1,045.3	61.5	86	13,026	3.98	519	48	89	50	161	168	334	2.59	785	451
WEST VIRGINIA----	14	440.9	31.5	84	11,823	3.90	461	46	68	31	158	188	302	2.55	783	481
WISCONSIN--------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
WYOMING----------	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
UNITED STATES--	6,570	257,026.1	39.1	84	12,214	3.71	453	49	94	38	96	156	277	2.30	728	450

1/ HERDS DESIGNATED AS "COMPLETE" WHEN ALL FEEDS, COSTS, AND VALUE OF PRODUCT ARE REPORTED.

2/ THESE STATES HAVE PRODUCTION RECORDS INCLUDED IN THE PLAN, BUT NONE OF THE HERD RECORDS ARE "COMPLETE".

TABLE 7.--U.S. COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OWNER-SAMPLER HERDS BY BREED AND MILK LEVEL, MAY 1, 1972-APRIL 30, 1973 1/

MILK LEVEL	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/CWT MILK	VALUE OF PROD.	INCOME OVER FD COST
RANGE	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
AYRSHIRE																
7,500 - 8,499---	5	126.3	25.3	81	7,849	3.91	307	36	86	41	138	116	240	3.07	497	257
8,500 - 9,499---	10	291.1	29.1	81	9,188	3.87	356	39	75	44	129	138	259	2.82	577	318
9,500 - 10,499---	17	480.4	28.3	83	10,009	3.92	392	42	81	45	140	151	260	2.61	615	355
10,500 - 11,499---	10	308.2	30.8	84	10,985	3.94	433	40	75	52	143	153	272	2.48	672	400
11,500 - 12,499---	6	189.2	31.5	83	12,017	3.87	465	44	110	33	152	162	287	2.38	763	475
12,500 - 13,499---	3	87.2	29.1	86	12,586	3.81	479	52	96	41	239	150	243	1.93	736	493
15,500 - 16,499---	1	5.9	5.9	84	15,813	3.61	571	57	72	47	186	288	423	2.68	1,104	681
AVG.--COMP. REC.--	52	1,485.3	28.6	83	10,296	3.89	401	41	84	45	143	148	264	2.59	637	373
AVG.----ALL REC.--	67	1,861.8	27.8	83	10,498	3.88	407									
GUERNSEY																
LESS THAN 6,500---	6	140.2	23.4	80	5,959	4.75	283	31	55	36	133	92	191	3.25	396	205
6,500 - 7,499---	20	608.5	30.4	82	7,242	4.49	325	31	72	41	155	89	187	2.58	443	256
7,500 - 8,499---	35	1,180.8	33.7	84	8,063	4.61	372	36	86	40	142	115	214	2.66	539	324
8,500 - 9,499---	55	1,436.4	26.1	85	9,010	4.62	416	40	65	39	150	114	212	2.36	570	358
9,500 - 10,499---	56	1,907.8	34.1	85	9,997	4.62	462	43	75	41	144	134	239	2.39	671	431
10,500 - 11,499---	22	713.7	32.4	86	10,966	4.58	502	51	79	42	126	139	231	2.10	701	470
11,500 - 12,499---	5	171.9	34.4	83	11,861	4.11	487	50	96	53	111	138	257	2.17	701	445
12,500 - 13,499---	4	139.0	34.8	84	12,783	4.05	518	46	182	51	179	144	284	2.21	836	553
AVG.--COMP. REC.--	203	6,298.3	31.0	84	9,275	4.57	424	41	76	41	144	122	223	2.43	603	380
AVG.----ALL REC.--	644	20,566.2	31.9	85	9,454	4.56	431									
HOLSTEIN																
LESS THAN 6,500---	9	830.1	92.2	73	6,274	3.79	238	48	118	59	318	166	213	3.39	445	232
6,500 - 7,499---	24	678.0	28.3	80	7,072	3.69	261	33	61	44	173	99	203	2.87	392	189
7,500 - 8,499---	79	2,789.6	35.3	80	8,134	3.68	299	37	98	51	142	108	217	2.67	455	238
8,500 - 9,499---	219	7,658.7	35.0	81	9,047	3.66	331	38	87	47	138	111	223	2.47	508	285
9,500 - 10,499---	467	18,383.6	39.4	81	10,052	3.65	367	42	103	44	151	128	250	2.49	583	332
10,500 - 11,499---	861	34,947.8	40.6	83	11,060	3.67	406	46	109	42	139	141	259	2.34	647	388
11,500 - 12,499---	1,165	46,663.3	40.1	84	12,023	3.66	440	49	112	42	138	152	271	2.26	704	433
12,500 - 13,499---	1,286	50,494.4	39.3	85	12,976	3.65	474	51	112	42	137	160	283	2.18	764	481
13,500 - 14,499---	948	38,342.5	40.4	85	13,947	3.66	510	55	121	41	133	175	302	2.17	833	531
14,500 - 15,499---	477	19,080.0	40.0	86	14,913	3.63	542	57	119	42	138	194	328	2.20	911	584
15,500 - 16,499---	177	6,601.1	37.3	86	15,843	3.59	569	60	123	41	133	196	333	2.10	944	611
16,500 - 17,499---	45	1,886.6	41.9	86	16,862	3.62	611	64	126	43	118	212	355	2.11	1,015	659
17,500 - 18,499---	9	284.9	31.7	86	17,823	3.66	652	67	85	42	167	234	376	2.12	1,078	702
19,500 - 20,499---	2	60.1	30.1	88	19,691	3.70	728	88	178	39	185	254	371	1.88	1,048	677
AVG.--COMP. REC.--	5,768	228,700.7	39.6	84	12,468	3.66	456	50	112	42	139	157	280	2.26	736	456
AVG.----ALL REC.--	13,937	553,561.3	39.7	84	12,758	3.70	472									
JERSEY																
LESS THAN 6,500---	9	234.8	26.1	78	5,637	4.98	281	27	67	32	172	86	185	3.28	376	191
6,500 - 7,499---	19	675.9	35.6	82	6,954	4.92	342	34	76	32	168	111	200	2.88	481	281
7,500 - 8,499---	54	1,800.5	33.3	84	8,081	4.95	400	37	71	35	154	132	229	2.83	579	351
8,500 - 9,499---	53	2,207.1	41.6	85	9,014	4.94	445	42	85	30	154	144	240	2.66	656	416
9,500 - 10,499---	31	1,025.2	33.1	85	9,978	4.71	470	46	58	30	156	166	268	2.67	719	451
10,500 - 11,499---	5	214.7	42.9	85	10,786	4.64	501	47	45	18	126	196	333	3.09	800	467
11,500 - 12,499---	2	76.2	38.1	85	12,053	4.32	521	52	71	30	151	238	336	2.79	862	526
12,500 - 13,499---	1	23.3	23.3	84	12,549	4.48	562	52	65	27	117	242	335	2.67	946	611
AVG.--COMP. REC.--	174	6,257.7	36.0	84	8,665	4.87	422	40	76	31	156	142	240	2.77	623	384
AVG.----ALL REC.--	293	10,621.3	36.3	85	8,701	4.94	430									
BROWN SWISS																
6,500 - 7,499---	2	45.1	22.6	81	7,144	3.95	282	27	38	50	103	57	165	2.31	418	253
7,500 - 8,499---	3	84.3	28.1	81	8,211	4.14	340	36	84	42	133	96	228	2.78	492	264
8,500 - 9,499---	9	372.9	41.4	85	8,978	3.98	357	40	150	31	86	118	238	2.65	517	279
9,500 - 10,499---	10	245.2	24.5	83	10,142	4.06	412	48	68	56	146	119	219	2.16	552	333
10,500 - 11,499---	11	326.6	29.7	84	11,107	4.02	447	43	97	41	128	115	214	1.93	635	420
11,500 - 12,499---	9	224.8	25.0	86	12,033	3.95	475	49	109	54	175	120	236	1.95	676	441
12,500 - 13,499---	9	287.3	31.9	85	12,852	4.01	515	52	152	44	120	163	283	2.20	771	488
13,500 - 14,499---	3	99.6	33.2	85	14,156	3.72	526	66	119	48	165	255	382	2.69	883	501
AVG.--COMP. REC.--	56	1,685.8	30.1	84	10,846	3.98	432	46	114	44	122	131	244	2.27	627	383
AVG.----ALL REC.--	138	4,102.5	29.7	84	10,792	3.98	430									

TABLE 7.--U.S. COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OWNER-SAMPLER HERDS BY BREEDS AND MILK LEVEL, MAY 1, 1972-APRIL 30, 1973 (CONTINUED)

MILK LEVEL	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/ CWT MILK	VALUE OF PROD.	INCOME OVER FD COST
RANGE	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
						MILKING SHORTHORN										
6,500 - 7,499---	1	16.4	16.4	67	6,927	3.64	252	37	34	41	203	95	178	2.57	335	157
7,500 - 8,499---	1	17.4	17.4	73	8,103	3.74	303	26	0	61	189	62	117	1.44	391	274
9,500 - 10,499---	1	20.9	20.9	81	10,335	3.87	400	35	73	37	149	110	186	1.80	598	412
AVG.--COMP. REC.--	3	54.7	18.2	74	8,603	3.78	325	33	56	46	178	90	162	1.92	453	292
AVG.----ALL REC.--	9	167.0	18.6	79	9,129	3.69	337									
						MIXED AND OTHER										
LESS THAN 6,500---	3	100.4	33.5	80	5,693	4.46	254	24	116	42	124	91	184	3.23	376	192
6,500 - 7,499---	4	114.4	28.6	82	7,046	4.17	294	28	44	53	130	85	193	2.76	437	244
7,500 - 8,499---	22	694.4	31.6	83	8,177	4.16	340	37	67	40	187	114	225	2.75	513	288
8,500 - 9,499---	29	1,161.7	40.1	83	9,046	4.20	380	41	108	32	168	136	248	2.74	588	340
9,500 - 10,499---	51	2,011.6	39.4	84	10,002	4.01	401	45	86	35	145	149	254	2.54	618	364
10,500 - 11,499---	69	2,673.8	38.8	84	10,996	3.96	435	49	109	38	170	156	281	2.56	705	424
11,500 - 12,499---	70	2,881.6	41.2	84	11,942	3.86	461	51	114	35	162	172	301	2.52	756	455
12,500 - 13,499---	39	1,559.3	40.0	85	13,006	3.78	492	51	119	43	137	176	316	2.43	816	500
13,500 - 14,499---	17	907.5	53.4	85	13,950	3.86	539	53	147	37	85	184	324	2.32	914	591
14,500 - 15,499---	8	352.3	44.0	85	14,798	3.88	574	53	203	38	101	165	312	2.11	899	587
15,500 - 16,499---	2	83.6	41.8	86	15,970	3.91	624	60	140	29	0	204	329	2.06	922	594
AVG.--COMP. REC.--	314	12,540.6	39.9	84	11,243	3.93	442	48	111	37	153	158	282	2.53	712	430
AVG.----ALL REC.--	1, 95	40,389.1	36.9	84	11,607	3.89	451									

1/ DASHES INDICATE THAT FEED WAS NOT INCLUDED IN RATION.

TABLE 8.--U.S. COW-YEAR AVERAGES FOR COMPLETE RECORDS OF OWNER-SAMPLER HERDS BY BREED AND MILK LEVEL, MAY 1, 1972-APRIL 30, 1973 1/

HERD SIZE	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC	SUCC FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	COST OF CONC	FEED COST	FC/ CWT MILK	VALUE OF PROD.	INCOME OVER FD COST
RANGE	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
AYRSHIRE																
5.0 - 25---	18	342.0	19.0	83	10,386	3.87	402	43	67	47	166	138	253	2.48	596	343
25.1 - 50---	34	1,146.3	33.7	83	10,270	3.90	401	41	89	44	135	151	267	2.62	649	382
GUERNSEY																
5.0 - 25---	81	1,508.5	18.6	84	8,880	4.62	410	38	62	42	152	100	188	2.16	540	352
25.1 - 50---	93	3,103.7	33.4	84	9,210	4.58	422	40	77	39	139	119	221	2.43	605	385
50.1 - 75---	27	1,520.5	56.3	85	9,625	4.54	437	43	87	41	155	143	254	2.66	651	398
75.1 - 100---	2	165.6	82.8	82	10,898	4.27	465	58	102	60	31	172	298	2.80	685	387
HOLSTEIN																
5.0 - 25---	1,181	23,317.8	19.7	84	12,270	3.67	450	51	78	51	138	144	251	2.06	675	424
25.1 - 50---	3,474	124,396.9	35.8	84	12,508	3.66	458	50	103	44	136	153	273	2.19	729	457
50.1 - 75---	836	49,539.4	59.3	84	12,591	3.64	458	49	127	38	135	165	295	2.35	762	467
75.1 - 100---	180	15,498.9	86.1	84	12,488	3.63	453	49	143	34	148	167	298	2.40	760	462
100.1 - 150---	61	7,231.2	118.5	85	12,400	3.65	453	49	156	34	174	165	307	2.47	783	477
150.1 - 200---	21	3,462.9	164.9	84	12,536	3.61	452	57	164	34	193	188	317	2.54	786	469
200.1 - 300---	9	2,181.5	242.4	83	12, 12	3.73	448	50	181	36	100	171	306	2.59	753	447
300.1 - 400---	1	313.3	313.3	83	11,541	3.62	418	90	--	10	365	337	368	3.19	916	548
400.1 - 500---	1	411.4	411.4	86	11,977	3.79	454	43	70	55	26	107	230	1.92	616	386
500.1 - 750---	4	2,347.4	586.9	83	10,363	3.58	371	70	195	33	258	233	379	3.75	772	392
JERSEY																
5.0 - 25---	46	759.7	16.5	84	8,525	4.86	414	40	56	39	157	148	240	2.80	602	362
25.1 - 50---	99	3,518.3	35.5	84	8,635	4.85	419	39	71	33	148	138	232	2.69	605	373
50.1 - 75---	25	1,512.0	60.5	83	8,705	4.92	428	39	77	25	161	139	249	2.89	647	398
75.1 - 100---	2	157.7	78.9	83	8,840	4.95	438	42	144	38	365	141	222	2.49	633	411
100.1 - 150---	1	103.8	103.8	86	8,461	5.24	443	37	81	30	151	170	306	3.62	675	369
200.1 - 300---	1	206.2	206.2	87	9,368	4.65	436	65	154	6	147	191	286	3.05	810	524
BROWN SWISS																
5.0 - 25---	21	396.0	18.9	84	10,732	4.00	429	43	88	52	153	123	237	2.25	620	383
25.1 - 50---	30	963.8	32.1	84	11,277	3.99	450	48	97	46	127	136	242	2.12	645	404
50.1 - 75---	4	243.7	60.9	87	10, 48	3.92	394	44	168	35	98	123	262	2.67	587	325
75.1 - 100---	1	82.3	82.3	80	8,708	3.98	347	41	219	8	25	130	255	2.93	568	313
MILKING SHORTHORN																
5.0 - 25---	3	54.7	18.2	74	8,603	3.78	325	33	56	46	178	90	162	1.92	453	292
MIXED AND OTHER																
5.0 - 25---	79	1,524.8	19.3	83	10,675	3.95	422	47	67	45	146	142	253	2.38	646	393
25.1 - 50---	180	6,523.3	36.2	84	11,211	3.89	436	46	98	41	146	154	279	2.51	695	416
50.1 - 75---	36	2,136.5	59.3	84	11,121	4.00	445	45	120	37	154	143	270	2.46	705	436
75.1 - 100---	6	515.9	86.0	85	11, 43	3.86	426	49	131	22	156	168	286	2.64	705	419
100.1 - 150---	8	979.2	122.4	85	12,316	3.95	487	50	168	25	103	173	310	2.54	817	507
150.1 - 200---	4	659.8	165.0	87	11,877	4.08	484	57	156	23	289	210	333	2.84	846	514
200.1 - 300---	1	201.1	201.1	88	11, 82	4.09	453	92	161	4	365	318	408	3.68	908	500

1/ DASHES INDICATE THAT FEED WAS NOT INCLUDED IN RATION.

TABLE 9.--COMPARISON OF PRODUCTION OF COWS ON OFFICIAL DHI AND DHIR TESTING, OWNER-SAMPLER TESTING, AND ALL OTHER COWS 1/

	OFFICIAL DHI AND DHIR				OWNER-SAMPLER				ALL OTHER COWS 2/			SUPERIORITY: OF OFFICIAL: DHI AND DHIR: COWS		SUPERIORITY OF O.-S. COWS	
TESTING YEARS 3/	HERDS	COW-YEARS	MILK	FAT	HERDS	COW-YEARS	MILK	FAT	AVERAGE COW-YEARS 4/	MILK	FAT	MILK	FAT	MILK	FAT
	NO.	NO.	LB	LB	NO.	NO.	LB	LB	NO.	LB	LB	LB	LB	LB	LB
1930	27,888	507,549	7,642	303	---	---	---	---	21,710,451	5/4,435	5/174	3,207	129	---	---
1940	27,948	676,141	8,133	333	---	---	---	---	22,994,859	4,519	179	3,614	152	---	---
1950	40,100	1,088,872	9,172	370	---	---	---	---	20,855,128	5,113	202	4,059	168	---	---
1959-60	41,293	1,746,752	10,561	409	24,274	615,899	---	---	15,345,349	6/6,522	6/244	4,039	165	---	---
1960-61	42,558	1,867,469	10,796	418	24,498	655,885	---	---	14,855,646	6,721	251	4,075	167	---	---
1961-62	42,034	1,958,355	11,032	426	24,954	698,302	---	---	14,385,843	6,919	257	4,113	169	---	---
1962-63	41,937	2,006,534	11,286	434	25,376	726,478	10,606	396	13,817,988	7/6,844	7/255	4,442	179	3,762	141
1963-64	40,670	2,010,144	11,685	447	25,598	752,229	10,885	404	13,206,127	7,148	263	4,537	184	3,737	141
1964-65	40,075	2,087,581	11,976	457	26,604	818,406	11,402	423	12,409,013	7,353	270	4,623	187	4,049	153
1965-66	38,879	2,058,592	12,127	462	26,259	839,839	11,472	425	11,613,569	7,530	276	4,597	186	3,942	149
1966-67	37,683	2,098,919	12,307	468	25,439	825,127	11,607	432	10,818,954	7,756	292	4,551	176	3,851	140
1967-68	36,869	2,131,929	12,397	471	25,143	847,485	11,847	441	10,144,086	8,035	292	4,362	179	3,812	149
1968-69	35,617	2,138,953	12,553	476	24,359	842,330	11,932	444	9,588,217	8,319	311	4,234	165	3,613	133
1969-70	34,308	2,122,011	12,750	483	23,281	839,343	12,185	453	8/9,192,146	8/8,622	8/312	4,128	171	3,563	141
1970-71	33,996	2,218,402	13,000	489	22,581	836,751	12,413	460	8/8,865,847	8/8,857	8/321	4,143	168	3,556	139
1971-72	33,197	2,244,685	13,226	496	21,345	805,555	12,544	466	8/8,715,760	8/9,134	8/332	4,092	164	3,410	128
1972-73	33,578	2,359,611	13,287	499	20,895	806,270	12,488	468	(9/)	(9/)	(9/)	(9/)	(9/)	(9/)	(9/)

1/ DASHES INDICATE DATA NOT TABULATED. ALL REFERENCES TO OFFICIAL DHI IN THE FOOTNOTES INCLUDE DHIR FROM 1959-60.

2/ DERIVED FROM U.S. COW POPULATION AND PRODUCTION FIGURES, EXCLUDING HEIFERS NOT FRESH, PUBLISHED IN DAIRY STATIS., ECON. RES. SERV., USDA, AND MILK PROD., STATIS. RPT. SERV., USDA. DATA FOR 1964-65 THROUGH 1971-72 REVISED.

3/ THE YEAR FOR WHICH DHIA ENROLLMENT IS GIVEN. FOR MULTIPLE YEARS, THE SECOND YEAR IS THE YEAR OF ENROLLMENT. MULTIPLE YEARS ARE GIVEN TO MATCH THE NATIONAL DHIA TESTING YEAR AFTER IT WAS CHANGED TO MAY 1-APRIL 30.

4/ THE FIGURES GIVEN FOR YEARS 1930, 1940, AND 1950 ARE THE REMAINDER OF THE U.S. COWS--EXCLUDING HEIFERS-NOT-FRESH--AFTER SUBTRACTING OFFICIAL DHI COWS FOR THE STATED YEAR. THE FIGURES FOR 1959-60 THROUGH THE END OF THE TABLE ARE CALCULATED AS IN THE FOLLOWING EXAMPLE: 1959 U.S. COWS, PLUS 1960 COWS, DIVIDED BY TWO, MINUS OFFICIAL DHI COWS, JANUARY 1, 1960, MINUS OWNER-SAMPLER COWS, JANUARY 1, 1960.

5/ FOR 1930, 1940, AND 1950, U.S. COW NUMBERS FOR EACH YEAR WERE MULTIPLIED BY THEIR AVERAGE PRODUCTION THAT YEAR; JANUARY 1 ENROLLMENT OF OFFICIAL DHI COWS WAS MULTIPLIED BY THE AVERAGE OFFICIAL DHI PRODUCTION FOR THE YEAR, AND THIS PRODUCTION WAS SUBTRACTED FROM TOTAL PRODUCTION OF U.S. COWS FOR THE YEAR TO OBTAIN THE PRODUCTION FOR ALL OTHER COWS. THE NUMBER OF ALL OTHER COWS WAS OBTAINED BY SUBTRACTING JANUARY 1 OFFICIAL DHI COWS FROM U.S. COWS FOR THE YEAR. PRODUCTION AVERAGES FOR ALL OTHER COWS WERE OBTAINED BY DIVIDING PRODUCTION VALUES BY COW NUMBERS.

6/ FOR 1959-60 THROUGH 1961-62, PRODUCTION FOR ALL OTHER COWS WAS CALCULATED AS IN THE FOLLOWING EXAMPLE: FOR 1959-60, U.S. MILK PRODUCTION FOR 1959 AND 1960 WAS AVERAGED. OFFICIAL DHI MILK PRODUCTION FOR 1959-60 WAS SUBTRACTED. THEN THAT FIGURE WAS DIVIDED BY THE AVERAGE COW YEARS CALCULATED AS EXPLAINED IN FOOTNOTE 4 TO GET AVERAGE MILK PRODUCTION FOR ALL OTHER COWS. FAT PRODUCTION FOR ALL OTHER COWS WAS CALCULATED IN THE SAME MANNER. OWNER-SAMPLER PRODUCTION WAS FIRST TABULATED BY USDA FOR 1962-63.

7/ FROM 1962-63 ON, PRODUCTION OF ALL OTHER COWS WAS CALCULATED AS EXPLAINED ABOVE, EXCEPT THAT OWNER-SAMPLER COW AND PRODUCTION TOTALS AS WELL AS OFFICIAL DHI TOTALS WERE SUBTRACTED FROM U.S. VALUES.

8/ PRELIMINARY.

9/ U.S. FIGURES FOR 1973 NOT AVAILABLE.

TABLE 10.--SUMMARY OF OFFICIAL DHI AND DHIR COW-YEAR AVERAGES, FOR HERDS REPORTING COMPLETE DATA, 1939-73

TESTING YEARS	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	FEED FED 1/				VALUE OF PROD.	COST OF CONC.	FEED COST	FC/CWT MILK	INCOME OVER FEED COST
								CONC.	SUCC. FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS					
	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
1939-40	2/19,330	467,775	24.2	--	8,049	4.05	326	--	---	--	---	165	32	68	0.84	97
1940-41	2/20,590	500,340	24.3	--	8,182	4.06	332	--	---	--	---	176	34	70	.86	106
1941-42	2/17,341	430,057	24.8	--	8,271	4.06	336	--	---	--	---	206	42	82	.99	124
1942-43	2/12,006	306,142	25.5	--	8,279	4.06	334	--	---	--	---	245	53	99	1.20	146
1943-44	2/11,433	308,678	27.0	--	8,141	4.05	330	--	---	--	---	274	63	118	1.45	156
1944-45	2/11,204	304,748	27.2	--	8,434	4.02	339	--	---	--	---	302	68	128	1.49	174
1945-46	2/11,795	318,461	27.0	--	8,440	4.05	342	--	---	--	---	314	70	130	1.54	184
1946-47	3/15,566	418,738	26.9	--	8,454	4.02	340	--	---	--	---	352	79	141	1.67	211
1947-48	3/18,573	494,036	26.6	--	8,429	4.01	338	--	---	--	---	388	95	165	1.96	223
1948-49	3/22,312	586,815	26.8	--	8,701	4.02	350	--	---	--	---	390	85	156	1.79	234
1949-50	3/24,841	675,685	27.2	--	8,949	4.01	359	--	---	--	---	359	76	147	1.64	212
1950-51	3/26,134	721,311	27.6	--	8,983	4.02	361	--	---	--	---	370	81	154	1.71	216
1951-52	3/26,423	768,916	29.1	--	9,015	3.97	358	--	---	--	---	399	87	165	1.83	234
1952-53 4/	18,557	525,346	28.3	--	9,069	3.96	359	30	56	37	168	461	101	194	2.14	267
1953-54	26,834	748,234	27.9	--	9,117	3.96	361	28	55	37	174	434	93	188	2.06	246
1954-55	28,727	822,254	28.6	--	9,261	3.94	365	28	61	37	178	429	89	183	1.98	246
1955-56	28,254	849,344	30.1	--	9,470	3.93	372	29	64	39	174	433	86	181	1.91	252
1956-57	27,133	863,275	31.8	--	9,521	3.92	377	30	66	39	173	448	88	183	1.90	265
1957-58	27,525	900,269	32.7	--	9,787	3.91	383	31	69	40	171	462	92	190	1.94	272
1958-59	27,796	902,074	32.5	--	10,042	3.89	391	33	75	40	174	475	93	195	1.94	280
1959-60	23,220	795,892	34.3	--	10,045	3.89	391	33	76	40	169	479	93	196	1.95	283
1960-61	18,644	689,710	37.0	--	10,048	3.88	390	32	78	39	163	485	94	198	1.97	287
1961-62	22,853	882,827	38.6	--	10,576	3.87	413	36	82	40	175	502	103	207	1.94	295
1962-63	27,093	1,089,290	40.2	84	10,983	3.85	423	39	92	40	156	501	113	222	2.02	279
1963-64	27,893	1,173,099	42.1	84	11,428	3.84	439	42	98	38	151	521	120	237	2.07	284
1964-65	28,237	1,229,675	43.5	85	11,744	3.82	449	44	102	38	151	539	127	244	2.08	295
1965-66	28,013	1,260,621	45.0	85	11,885	3.81	453	45	108	36	114	559	133	256	2.15	303
1966-67	27,483	1,282,357	46.7	85	12,030	3.82	459	47	113	36	5/124	631	143	265	2.20	366
1967-68	25,447	1,257,600	49.4	85	12,121	3.81	462	48	120	34	134	667	149	271	2.27	395
1968-69	25,208	1,271,983	50.5	85	12,223	3.80	465	49	6/122	33	132	700	146	266	2.21	434
1969-70	23,130	1,227,860	53.1	85	12,428	3.79	471	50	124	32	129	736	153	273	2.23	463
1970-71	22,824	1,240,414	54.3	85	12,659	3.77	477	51	116	33	120	767	165	287	2.30	480
1971-72	20,987	1,211,464	57.7	85	12,775	3.75	479	52	116	30	122	791	174	301	2.39	490
1972-73	22,628	1,322,782	58.5	85	12,801	3.76	481	52	118	30	113	821	187	321	2.54	500

1/ DATA FOR 1939-40 THROUGH 1951-52 SENT ONLY TO INDIVIDUAL STATES AND NOT PUBLISHED IN CURRENT DHI LETTERS.
2/ ESTIMATED USING COWS-PER-HERD ON TEST ON JANUARY 1 OF SECOND YEAR OF TESTING YEAR.
3/ HERD NUMBERS AS REPORTED IN EACH ANNUAL REPORT (ALL HERDS ON TEST).
4/ ONLY COMPLETE HERDS (OR THOSE REPORTED AS COMPLETE) USED IN TABULATIONS FROM HERE ON. THE NUMBER OF HERDS AND COWS WILL DIFFER FROM THE NUMBER ENROLLED. COWS AND HERDS FROM STATES NOT REPORTING COMPLETE RECORDS NOT INCLUDED.
5/ DATA UNAVAILABLE. AVERAGE OF ADJACENT YEARS USED.
6/ SOME DATA UNAVAILABLE. FIGURE INCLUDES CALCULATED AVERAGES FOR MISSING DATA.

TABLE 11.--SUMMARY OF OWNER-SAMPLER COW-YEAR AVERAGES FOR HERDS REPORTING COMPLETE DATA, 1962-73 1/

TESTING YEARS	HERDS	COW-YEARS	COWS PER HERD	DAYS IN MILK	MILK	FAT	FAT	CONC.	SUCC. FOR-AGE	DRY FOR-AGE	PAS-TURE DAYS	VALUE OF PROD.	COST OF CONC.	FEED COST	FC/CWT MILK	INCOME OVER FEED COST
	NO.	NO.	NO.	%	LB	%	LB	CWT	CWT	CWT	NO.	$	$	$	$	$
1962-63	4,165	136,781	32.8	83	10,785	3.72	402	37	83	46	147	460	113	219	2.03	241
1963-64	3,033	80,172	26.4	83	10,987	3.74	411	40	80	44	143	427	103	204	1.86	223
1964-65	6,355	197,385	31.0	84	11,470	3.72	427	41	89	44	2/137	486	119	228	1.99	258
1965-66	7,096	224,616	31.6	84	11,574	3.72	430	42	95	42	2/137	499	121	237	2.05	262
1966-67	7,537	243,943	32.4	84	11,645	3.72	433	43	98	43	2/137	563	130	242	2.08	321
1967-68	5,928	212,380	35.8	84	11,834	3.72	440	44	103	40	130	615	142	259	2.21	357
1968-69	7,614	263,703	34.6	84	11,953	3.71	443	46	2/104	41	123	633	133	243	2.05	391
1969-70	7,134	259,195	36.3	84	12,102	3.69	446	47	104	40	116	666	139	249	2.08	417
1970-71	6,792	254,890	37.5	84	12,292	3.68	452	48	93	39	106	696	147	258	2.11	439
1971-72	6,324	246,148	38.9	84	12,327	3.67	453	49	90	38	106	709	152	265	2.17	444
1972-73	6,570	257,026	39.1	84	12,214	3.71	453	49	94	38	96	728	156	277	2.30	450

1/ OWNER-SAMPLER RECORDS WERE FIRST TABULATED BY DAIRY HERD IMPROVEMENT INVESTIGATIONS, USDA, IN 1964 FOR THE 1962-63 TESTING YEAR.
2/ DATA UNAVAILABLE. AVERAGE OF ADJACENT YEARS USED.

TABLE 12.--PRODUCTION AND VALUE OF PRODUCT FOR ALL U.S. MILK COWS, 1940-72 1/

YEAR	MILK COWS 2/ JAN. 1 3/	 AVG. FOR YR.	 DEC. AVG. 4/	PRODUCTION PER COW MILK	 FAT	 FAT	MILK PRODUCED	FAT PRODUCED	FARM VALUE OF MILK PRODUCED
	THOU			LB	%	LB	MIL LB	MIL LB	1,000 DOL
1940		23,671		4,622	3.97	183	109,412	4,343	1,930,935
1941		24,288		4,738	3.97	188	115,088	4,571	2,364,931
1942		25,027		4,736	3.97	188	118,533	4,704	2,867,340
1943		25,451		4,598	3.97	183	117,017	4,651	3,464,864
1944		25,597		4,572	3.98	182	117,023	4,657	3,567,852
1945		25,033		4,787	3.98	190	119,828	4,764	3,673,034
1946		24,089		4,886	3.97	194	117,697	4,677	4,512,653
1947		23,329		5,007	3.97	199	116,814	4,639	4,866,495
1948		22,336		5,044	3.97	200	112,671	4,478	5,295,194
1949		22,024		5,272	3.96	209	116,103	4,595	4,488,255
1950		21,944		5,314	3.96	210	116,602	4,618	4,431,995
1951		21,505		5,333	3.93	210	114,681	4,509	5,108,110
1952		21,338		5,374	3.90	210	114,671	4,476	5,425,543
1953		21,691		5,542	3.87	215	120,221	4,655	5,101,819
1954		21,581		5,657	3.86	219	122,094	4,717	4,757,279
1955		21,044		5,842	3.84	225	122,945	4,726	4,834,842
1956		20,501		6,090	3.82	233	124,860	4,773	5,075,318
1957		19,774		6,303	3.81	240	124,628	4,744	5,166,860
1958		18,711		6,585	3.78	249	123,220	4,658	5,037,729
1959		17,901		6,815	3.76	256	121,989	4,588	5,037,223
1960		17,515		7,029	3.76	264	123,109	4,628	5,158,116
1961		17,243		7,290	3.74	273	125,707	4,715	5,296,024
1962		16,842		7,496	3.74	280	126,251	4,718	5,182,148
1963		16,260		7,700	3.71	286	125,202	4,649	5,159,474
1964		15,677		8,099	3.70	300	126,967	4,699	5,304,899
1965		14,953		8,305	3.70	307	124,180	4,592	5,296,774
1966		14,071	13,756	8,522	3.69	314	119,912	4,426	5,801,039
1967		13,415	13,139	8,851	3.69	327	118,732	4,377	6,005,639
1968		12,832	12,571	9,135	3.67	335	117,225	4,305	6,206,150
1969		12,307	12,113	9,434	3.67	346	116,108	4,264	6,434,834
1970 5/	12,063	12,000	11,921	9,747	3.66	357	116,962	4,283	6,755,180
1971 5/	11,908	11,842	11,785	10,009	3.66	366	118,532	4,344	7,032,632
1972 5/	11,773	11,710	11,652	10,271	3.68	377	120,278	4,420	7,372,830

1/ DATA THROUGH 1959 OBTAINED FROM STATIS. BUL. 303, ECON. RES. SERV., 1962; FOR 1960 THROUGH 1964, FROM AGR. STATIS., 1971; FOR 1965 THROUGH 1972, FROM MILK PRODUCTION, DISTRIBUTION, AND INCOME, 1970-1972, APRIL 1973, STATIS. RPT. SERV., USDA.

2/ EXCLUDING HEIFERS NOT YET FRESH.

3/ JANUARY 1 COUNT OF MILK COWS NOT TAKEN BEFORE 1970.

4/ DECEMBER COW NUMBERS NOT USED BY ANIMAL IMPROVEMENT PROGRAMS LABORATORY BEFORE 1966.

5/ PRELIMINARY.

FORMAT FOR REPORTING YEARLY HERD AVERAGE DATA TO USDA

The format for reporting yearly herd average data on magnetic tape to USDA has not changed since 1968. It is as follows:

Positions	Data
1	Breed of herd 1/.
2	Type of testing code 2/.
3-10	Herd code (State, county, and herd number).
11-15	Cow-years in herd average (XXXX$_{\wedge}$X).
16-17	Percent days in milk.
18-22	Herd average milk (lb).
23-25	Herd average fat (lb).
26	Codes for verifying or giving details on production 3/.
27-29	Concentrates fed per cow (nearest 100 lb).
30-31	Average percent estimated net energy (ENE) in concentrates 4/.
32-33	Average percent protein in concentrates (code "99" if unavailable).
34	Codes for verifying or giving details on concentrates 5/.
35-37	Succulent forage per cow (nearest 100 lb).
38-39	Average percent ENE in succulent forage 4/.
40-41	Number of months corn silage fed 6/.
42-43	Number of months grass silage fed 6/.

44-45	Number of months other succulents fed 6/.
46	Codes for giving details on, or verifying, succulent forage 7/.
47-49	Dry forage per cow (nearest 100 lb).
50-51	Average percent ENE in dry forage 4/.
52-53	Number of months legume hay fed 6/.
54-55	Number of months mixed legume-grass hay fed 6/.
56-57	Number of months grass hay fed 6/.
58-59	Number of months other dry forage fed 6/.
60	Codes for giving details on or verifying dry forage 8/.
61-63	Herd-days on pasture.
64-66	Average therms of ENE per cow obtained from grazing during year (nearest 100) 9/.
67	Codes for verifying or giving details on grazing 10/.
68-70	Cost of concentrates per cow at prevailing market prices ($) 11/
71-73	Cost of succulent forage per cow at prevailing market prices ($).
74-76	Cost of dry forage per cow at prevailing market prices ($).
77-79	Total feed cost per cow, including estimated value of pasture, at prevailing market prices.

80-81	Codes for verifying or giving details on feed costs 12/.
82-84	Number of man-years involved in caring for and milking dairy cattle (XX$_\wedge$X) 13/.
85	Codes for detailing man-years 13/.
86-89	Average value of milk per cow ($).
90-92	Herd average body weight (10 lb).
93-94	Month in which testing year ended.
95-96	Year in which testing year ended.
97-99	Zeros.
100	Record correction and verification codes 14/.

Footnotes for Format of Herd Average Data

1/ If 75 percent or more of the cows in a herd are of one breed, report it as the breed of the herd. Otherwise, code as mixed herd. Use standard DHIA breed codes as follows:

1 - Ayrshire.
2 - Guernsey.
3 - Holstein.
4 - Jersey.
5 - Brown Swiss.
6 - Milking Shorthorn.
7 - Red Dane.
8 - Mixed.
9 - Red Poll.

Note: A change to alphabetic breed codes has been approved and will be introduced in the near future.

2/ "Type-of-testing" code:

0 - Official DHI.
1 - DHIR.
2 - Bimonthly (unofficial).
3 - Alternate AM/PM (unofficial).
4 - Goat (all types of testing).
5 - Other unofficial plans.
6 - Vo-Ag (FFA) (unofficial).
7 - O-S (unofficial).
P - O-S, AM/PM (unofficial).
8 - WADAM (unofficial).
9 - Trimonthly (unofficial).

3/ Production verification or detailing codes (Psn. 26):

0 - Nothing unusual noted--production data must be present.

1 - All or part of cows in the herd are on 3X milking.

2 - Production (milk and fat) is correct although out of range for editing limits.

3 - Combination of codes 1 and 2.

4 - Fat percent (derived from reported milk and fat) is correct although higher or lower than normally expected.

5 - Combination of codes 1 and 4.

6 - All yields verified (milk, fat, and derived percent fat) (combination of codes 2 and 4).

7 - Combination of codes 1 and 6.

4/ Therms per cwt.

5/ Codes for verifying or detailing concentrate feeding (Psn. 34).

0 - Nothing unusual noted--concentrates fed.

1 - Entire or most of ration fed as concentrates (so-called "complete ration").

2-7 - Not used at present.

8 - No concentrates fed.

9 - Missing, incomplete, or unknown concentrate feeding.

6/ Number of test-days on which this type of forage was reported as being fed (range, 0-12). If unavailable, code as "99."

7/ Codes for verifying or detailing succulent forage feeding (Psn. 46).

- 0 - Nothing unusual noted--succulent forage fed.
- 1 - ENE based on laboratory analyses.
- 2-7 - Not used at present.
- 8 - No succulent forage fed.
- 9 - Missing, incomplete, or unknown succulent forage feeding.

8/ Codes for verifying or detailing dry forage feeding (Psn. 60).

- 0 - Nothing unusual noted--dry forage fed.
- 1 - ENE based on laboratory analyses.
- 2-7 - Not used at present.
- 8 - No dry forage fed.
- 9 - Missing, incomplete, or unknown dry forage feeding.

10/ Codes for verifying or detailing grazing (Psn. 67).

- 0 - Nothing unusual noted--pasture fed.
- 1 - ENE based on laboratory analyses.
- 2-7 - Not used at present.
- 8 - Grazing not used for milking cows (i.e., year-round drylot operation).
- 9 - Missing, incomplete, or unknown data on grazing.

11/ Feed costs reported to USDA should be based on the market value of the feeds used rather than on their cost of production.

Farm-grown feeds should be charged at their market value f.o.b. the farm. Purchased feeds should be charged at their delivered value.

Feed costs reported should reflect only the feed used for milking and dry cows. Please identify other situations by codes in positions 80-81.

12/ Codes for verifying and detailing feed costs (Psn. 80-81).

00 - Nothing unusual noted--feed costs reported.

10 - Includes only value of feed used for milking cows.

20 - Also includes value of feed used for dairy animals other than milking herd.

90 - Feed costs are based on farmer-reported cost of production rather than market value.

91 - No feed costs available.

92 - Concentrate costs not available.

93 - Succulent forage costs not available.

94 - Dry forage costs not available.

95 - Combination of codes 92 and 93.

96 - " 92 and 94.

97 - " 93 and 94.

98 - " 92, 93, and 94.

99 - Incomplete, missing, or unknown feed costs.

13/ The preferred definition of man-years is the time spent with the dairy herd (excluding time spent in crop production), regardless of whether crops are sold or used as feed for the dairy herd.

Please identify how man-years were computed if it is not possible to report the preferred data using the codes below: (Psn. 85).

Code	Meaning
0 -	Preferred definition as given above.
1 -	Man-years also includes time spent in producing crops used only as feed for dairy cattle.
2-8 -	Not used at present.
9 -	Missing, unknown, or incomplete man-years.

14/ Record correction and verification codes.

0 - No correction or verification.

1 - Information in this record replaces any previously reported data for herd and testing year coded in this record. No verification.

2 - Delete any data previously reported and included in master file for herd and testing year coded in this record.

3 - Verification of data in this record not covered by specific verification codes for production or feed.

4 - Combination of codes 1 and 3.

5-8 - Not used at present.

9 - Data should not be used (i.e., herd not on test for entire year, etc.).

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